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ABSTRACT

This report described an Iowa State University program which trained educational researchers in a 3-year graduate program leading to the Ph.D. degree. The program provided trainees with research training in two complimentary areas of specialization: (a) educational and psychological measurement and program evaluation; and (b) educational research in computer supported learning. Each trainee was encouraged to plan, develop, experiment, implement, conduct, evaluate, and disseminate educational research in his area of specialization. The program was interdisciplinary in nature, thereby providing utilization of staff, resources and facilities. Courses in research design, methodology, statistics and computer use in research were offered to supplement courses in education. Practicum research experiences were also provided. The report contained a list of the program's graduates and their places of employment. Letters of evaluation by former students were also included. (Author/BRB)

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PROGRESS REPORT

Project No. 6-1750
Grant No.: OEG-0-9-061750-4400(010)

INTERDISCIPLINARY PROGRAM AND RESEARCH EXPERIENCES FOR THE PREPARATION OF EDUCATIONAL RESEARCHERS

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DR. TREVOR G. HOWE

IOWA STATE UNIVERSITY
College of Education
Ames, Iowa 50010

November 1971

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Progress Report

Project No. 6-1750

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Interdisciplinary Program and Research Experiences for the Preparation of Educational Researchers

Dr. Trevor G. Howe

Iowa State University
College of Education
Ames, Iowa 50010

November 1, 1971

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
National Center for Educational Research and Development

II. ABSTRACT

Title: Interdisciplinary Program and Research Experiences for the Preparation of Educational Researchers

Project Director: Dr. Trevor G. Howe

Agency: Iowa State University
College of Education
Ames, Iowa

Date: November 1, 1971

This is a progress report describing a continuation grant received by Iowa State University that has provided support for the Educational Research Training Program. This project began on September 1, 1966, with twenty research fellows receiving support. For each of the four years since that time it has been supported at the same level. Twelve research fellows were supported during the 1970-71 school year. No new students were added during the 1970-71 school year, therefore only twelve fellows who had eligibility remaining were permitted to continue. During the current year 1971-72 one student has one full year of eligibility remaining and the other student, one quarter (3 months) of eligibility remaining. The program was designed to train Educational Researchers in a three-year graduate program leading to the Ph.D. degree.

The program was designed to provide trainees with research training in two complementary areas of specialization: (1) Educational and Psychological Measurement and Program Evaluation. (2) Educational Research in Computer Supported Learning. By placing each trainee in the role of the researcher, the emphasis was for the trainee to plan, develop, experiment, implement, conduct, evaluate, and disseminate educational research in his area of specialization.

The program, as the title indicates, was interdisciplinary in nature, thereby providing more efficient utilization of staff, resources, and facilities in providing research training. The Departments of Psychology, Sociology, Economics, Physics, Mathematics, Statistics, and Computer Science cooperated very closely with the College of Education on the training of Educational Researchers. They offered, for example, courses in research design, methodology, statistics, and computer use in research to supplement those offered in Education.

Practicum research experiences have been provided through the cooperation of the following agencies and departments: Off-Campus--IBM Research Facility, Yorktown Heights, N.Y.; Northwest Regional Laboratory, Portland, Ore.; Research Coordinating Unit, Dept. of Pub. Instruct., Des Moines, Ia; Area XI Community College, Ankeny, Ia.; and Boys Training School, Eldora, Ia. On-Campus--Student Counseling Service; Computation Center; Sociology Dept.; Physics Dept.; Psychology Dept.; Office of Student Affairs; Curriculum-Instructional Resources Center; and Statistical Laboratory.

Briefly, thirty-one graduates of the program have been placed in the following types of teaching and research positions: eighteen at colleges and universities; two with the Center for Research and Development in Vocational and Technical Education, Ohio State University; one at the Southwest Regional Laboratory; one with the Educational Testing Service at Princeton, N.J.; four with State Departments of Public Instruction in Illinois and Iowa; two with area schools; two with large public school systems; and one as Director, Area Extension.

III. PROGRESS REPORT

(Updating the report submitted December 11, 1970)

A. Program Objectives

The program was planned to offer the highest quality training possible for educational researchers. The training was designed to prepare researchers who were competent to develop, conduct, and evaluate educational research in institutions of higher education, in state departments of education, in regional educational laboratories, and in other educational settings.

The three year program provided experiences and instruction in three integral areas: (1) research core; (2) research experiences and practicum; and (3) areas of specialization. All trainees completing the three year program earned credits beyond the minimum 108 quarter hours and, upon, meeting the requirements of the graduate college, qualified for the degree Doctor of Philosophy.

The program was designed to provide trainees with research training in two complementary areas of specialization: (1) Educational and Psychological Measurement and Program Evaluation; and (2) Educational Research in Computer Supported Learning. Each trainee was placed in the role of the researcher, and the emphasis was for trainee involvement in planning, experimenting, implementing, conducting, evaluating, and disseminating educational research in his area of specialization.

The program, as the title indicates, was interdisciplinary in nature, thereby providing more efficient utilization of staff, resources, and facilities in providing research training. The Departments of Psychology, Sociology, Economics, Physics, Mathematics, Statistics, and Computer Science cooperated very closely with the College of Education on the training of Educational Researchers. They offered, for example, courses in research design, methodology, statistics, and computer use in research, to supplement those offered in Education.

B. Program Changes

A sharpening of the focus of the program was accomplished by concentrating on two complementary areas of specialization. The major objective of the Educational Research Training Program was to prepare researchers to develop, conduct, evaluate, and disseminate educational research. Trainees were provided research training in the following two areas of specialization:

1. Educational-Psychological Measurement and Program Evaluation.

2. Educational Research in Computer-Supported Learning.

A brief description of the two areas of specialization is presented in the paragraphs that follow. Examples of completed research are given for purpose of illustration.

1. Educational-Psychological Measurement and Program Evaluation

The focus of training in this area was on evaluation. The training included four kinds of strategies for evaluating educational programs: context, input, process, and product evaluation as presented by Stufflebeam, Guba & Clark, and others.

The major substantive components included curriculum program development, measurement, applied statistics, and computer usage. Trainees pursued programs involving course work and structured research experiences. The model for evaluation of activities associated with educational criterion measures and performance objectives were developed around the principles underlying the areas discussed by Bloom, Krathwol, Mager, Popham, and subsequent works.

Elementary and secondary education, vocational and technical education, and higher education provided the setting for research in this area. The following titles of Ph.D. dissertations are examples of specific research completed:

"An Evaluation of Workshops to Improve Teacher Competencies"

"Controlled Practice in the Training of Elementary Teachers"

"Experimental Evaluation of Single-Concept Films as Instructional Aids in Teaching Vocational Agriculture"

"Pupil Achievement in an Experimental Non-graded Elementary School"

"A Comparison of Audio-Tutorial and Lecture Methods of Teaching"

"Effects of Using the Laboratory Method to Teach Geometry in Selected Sixth Grade Mathematics Classes"

"Structure of the Environment and the Growth of Strategies for Acquiring Information"

2. Educational Research in Computer-Supported Learning

a. Areas of Specialization

The computer presents the educational community with a new and exciting dimension in research; however, its exploration requires personnel who are specifically trained in this area. By providing an opportunity for qualified students, who have declared their primary interest to be germane to education, to acquire a high level of competency in computer science is the most desirable approach to meeting these critical personnel needs. The training program in computer-supported learning is based on this approach.

This interdisciplinary training program provided an opportunity for the trainee to gain proficiency in one or more of the following areas of research. A brief description of the areas

and examples of work which were active or have been completed on this campus include:

(1) The development and evaluation of computer-aided research, simulation, and modeling in the areas of basic learning, problem solving, or decision making processes. This area includes work done in educational psychology and educational administration.

Example: The use of computer simulation to examine the validity of Getzel's and Guba's model in terms of its ability to predict administrative behavior.

(2) The development and evaluation of computer presented, prescribed or evaluated lessons and examinations. This area encompasses Computer-Assisted Instruction, Computer-Managed Instruction, Computer-Based Instruction, and Individually Prescribed Instruction.

Examples:

(a) The development of a CAI Program to teach probability theory to graduate students in educational statistics.

(b) The development of a user directed file searching system. This system will support the construction and evaluation of curriculum materials involving information seeking methodology, such as library science or botanical classifications.

(3) The development and evaluation of student directed computer processes in which the students utilize or develop computer programs in support of other methods in instruction. The development of games, simulations, and statistical and mathematical packages for instructional purposes falls within this category.

Example: The development of a computerized simulation to be used in teaching experimental design in the behavioral sciences.

b. Organizational Considerations

(1) Formal Studies

Students choosing to research one of these areas would pursue formal work in the Department of Computer Science. Since this department is itself interdisciplinary, sharing numerous appointments with other departments including education and psychology, it is ideally suited to support this work.

In support of the training program, two computer science courses for educational researchers were developed. A third is being offered as special research topics. In addition to these, courses are offered in programming languages, numerical and non-numerical programming techniques, equipment design, statistical programming, commercial data processing, and artificial intelligence.

(2) Available Equipment

The computer equipment available to support research and training includes IBM 360/65, SDX 910, PDP-12, and LINK-8 digital computers as well as several analog machines. Peripheral equipment includes several types of remote terminals.

Iowa State University has many strong departments with national reputations for outstanding staff, course offerings, and research. The Educational Research Training Program being interdisciplinary in nature involved the cooperation of several academic departments. Other resources available to trainees included Iowa State University Library. It is one of the best in the country. The Iowa State Computation Center and the Statistics Department are both leaders in the field. The Iowa State Student Counseling Service administers tests to all incoming students. The staff holds joint appointment in Psychology and Education. They offer many student services. They are actively engaged in institutional research. This has proven to be an excellent facility for intern positions. A number of the research trainees have worked on special problems in measurement and evaluation.

3. Core Faculty

a. Two new faculty members were added to the core faculty last year. They are the following:

	Rank	Date
Dr. Rex Thomas	Assistant Professor of Computer Science and Education	July 1, 1970
Dr. Patricia Keith	Assistant Professor of Sociology and Education	September 1, 1970

Dr. Rex Thomas was appointed an Assistant Professor on July 1, 1970, and was assigned to the core faculty of the Research Training Program. He has had research experience both in the University and industry. He is a graduate of the Educational Research Training Program. His dissertation was titled, "Computerized Simulation for Teaching Experimental Design". His six month research training practicum was at the IBM Reseearch Facility at Yorktown Heights, New York.

Dr. Patricia Keith was appointed an Assistant Professor of Sociology and Education on September 1, 1970. She was assigned to the core faculty of the Research Training Program one-fourth time. She has made a real contribution by providing insights to the sociological dimensions of the behavioral sciences as they relate to evaluation problems in education.

b. Current Faculty Assignments

Dr. Trevor G. Howe	Professor of Education Director, Research Training Program
Dr. Harold Dilts	Professor-in-Charge, Secondary Education Associate Director, Research Training Program

. Interdisciplinary Advisory Committee

The Interdisciplinary Advisory Committee consisted of researchers from selected departments of the University. The major criterion in the selection of the committee members was an active participation in researching problems relating to education and/or extensive experience in guiding the research experience of graduate students. The major functions of the committee were to aid in the selection of trainees for the program, to establish lines of communication between the Unit and the various departments and colleges on campus, and to provide assistance and counsel on specific problems that might arise in meeting the objectives of the program.

The committee is composed of the following members:

(1)	Howe, Trevor G.	Professor of Education, Project Director & Chairman
(2)	Dilts, Harold E.	Professor-in-Charge, Secondary Education Associate Director
(3)	Warren, Richard D.	Associate Professor, Sociology & Statistics
(4)	Maple, Clair G.	Professor of Mathematics, Director of the Computation Center
(5)	Scruggs, Marguerite	Professor and Associate Dean of Research College of Home Economics
(6)	Bartz, Wayne H.	Associate Professor of Psychology
(7)	Beal, George M.	Professor and Chairman, Sociology Department
(8)	Hussey, Keith M.	Professor and Head, Earth Science
(9)	Lindahl, Clarence	Professor of Mathematics
(10)	Lagomarcino, Virgil	Dean, College of Education

C. Trainees

1. Selection

Students were recruited nationally and encouraged to apply. Students making application for an educational research fellowship were carefully screened. They must meet the requirements for admission to the graduate college, must be recommended by the departments in which they would build their areas of specialization and must meet the criteria established by the Unit for Educational Research Trainees.

Applicants for the Educational Research Training Program were asked to supply the Program Director with the following:

a. Letter of application expressing the applicant's interest in the program, dedication or commitment to research, qualifications, and future plans.

b. Completed formal application form.

c. Evidence of admission to the Graduate College.

d. Official transcripts of undergraduate and graduate work indicating courses taken and grades received (top quartile).

e. Three letters of recommendation from former employers, superintendents, department heads, or major professors. These should cite work experience and performance, or college academic achievement, and a statement concerning aptitude or probability of success in a research training program.

f. Test information: The Miller Analogies Test, The Doppelt Mathematical Reasoning Test are required and G.R.E. recommended.

g. Personal interview if possible.

The Interdisciplinary Advisory Committee members individually rated each applicant on a ten point scale using the information supplied by the applicant. Applicants were then ranked and recommended to the Graduate College as vacancies occurred.

2. Present Trainees (1971-1972)

The Miller Analogies Test (MAT) and The Doppelt Mathematical Reasoning Test (DMRT) scores for the trainees presently enrolled in the program are presented below. The academic achievement of the trainees, as measured by the University grade point average inclusive up to September 1, 1971, were as follows. (The names are listed alphabetically by year in the program.

Third Year Trainees	Miller Raw Score	Miller %ile	Doppelt Raw Score	Doppelt %ile	G.P.A. Up To 9/1/71	Expected Graduation Date
Michels, Thomas E.	48	63	41	97	3.94	8/72
*Tack, Leland R.	53	73	42	98	3.77	2/72

These grades were based on course work taken in majors and minors in several areas of the University (where B = 3; A = 4).

*Eligibility remaining through Fall Quarter only.

3. Last Year's Trainees (1970-1971) in addition to those above

Name	Miller Raw Score	Miller %ile	Doppelt Raw Score	Doppelt %ile	G.P.A.	Graduation Date
DeBlauw, Robert A.	73	97	47	99	3.87	11/71
Gradwell, John B.	47	60	21	60	3.78	8/71
Lacroix, William J.	66	91	38	95	3.78	8/71
Lewis, Robert A.	86	99	41	97	3.72	8/71
McWethy, David D.	57	79	34	91	3.95	6/72
Pearson, Joanne M.	53	73	26	78	3.88	8/71
Prescott, Mary R.A.H.	72	95	26	78	3.74	11/71
Ruebling, Charles E.	64	89	45	99	3.62	8/72
Tolsma, Robert J.	62	86	20	55	3.76	11/71
VanWoerkom, David D.	53	73	39	96	3.37	6/72

4. Graduates

a. The following is a list of those who have received the Ph.D. degree through the Educational Research Training Program at Iowa State University, ordered by graduation date, and listing their thesis titles:

Name	Thesis Title
Zook, Wayne	Personnel and Training Needs for Skilled and Technical Workers in Iowa Industries Manufacturing and Fabricating Plastics
Gibbs, Gordon L.	Use of Computer Simulation to Examine the Validity of Getzels' and Guba's Model in Terms of its Ability to Predict Administrative Behavior
Munster, Richard D.	Assessment of Teacher Induction Practices in Iowa Schools as Experienced by Iowa State University Graduates
Omvig, Clayton P.	Characteristics of the Disadvantaged Residents and Potential Human Resources in Area XI Community College District
Cage, Bob N.	Cost Analysis of Selected Educational Programs in the Area Schools of Iowa
Clark, Sam	Estimate of Initial Reading Readiness by Cross-Perceptual Performance in Auditory and Visual Modalities
Petersen, Richard R.	Controlled Practice in the Training of Elementary Teachers
Echternacht, Gary J.	Evaluation of Innovations to Improve Teacher Competencies
VanHorn, K. Roger	Structure of the Environment and the Growth of Strategies for Acquiring Information
Klit, John A.	Experimental Evaluation of Single-Concept Films as Instructional Aids in Teaching Vocational Agriculture
Thomas, Rex	Computerized Simulation for Teaching Experimental Design
Bennett, Roy M.	Student Achievement in Biology 101 at Iowa State University
Borcher, Sidney D.	Experimental Evaluation of Demonstrations in Teaching Vocational Agriculture

Byerly, Richard L.	The Use of Multiple Regression and Path Analysis on Analyzing Success in Journalism at Iowa State University
Klingensmith, John	Patterns of Change in Academic Performance and Their Correlates with Pre-College Variables
McCaslin, Norval L.	Experimental Evaluation of Field Trips on Instruction in Vocational Agriculture
McClain, Donald H.	Development of a Computer-Assisted Instruction Unit in Probability
Schumacher, Gary	The Development of Encoding Processes in Memory
Wisnieski, Gerald	Development and Evaluation of Self-instructional Mathematics Materials Designed for Students in Educational Statistics
Zimmerman, Karen A.	Verbal Classroom Interaction and Characteristics Including Self-Actualization of Home Economics Teachers
Pearson, Joanne M.	Interrelationship of Home Environment and Industrial Employment Including Methodological Study of Family Food Practices
Gradwell, John B.	Commonalities in Agricultural Mechanics and Industrial Arts Education
Lacroix, William J.	Student Achievement in a General Education Course Using Selected Experimental Time Allocations
Lewis, Robert A.	Two Comparisons of Array and List Processing Memories for the Aldous Simulation of Personality
Prescott, Mary	A Comparison of Identification in Delinquents and Non Delinquents
Tolsma, Robert J.	Measurement of Group Responses to Assess the Environmental Press of Secondary Schools
DeBlauw, Robert A.	Effect of a Multimedia Program on Achievement and Attitudes of Elementary and Secondary Students

b. List of Ph.D. Graduates of the Educational Research Training Program at Iowa State University

Information on date of graduation, major area, minor area, position, place of employment, and research responsibilities assumed by each is presented. (* indicates major area.)

Name	Place of Employment	Responsibilities
Zook, Wayne May, 1968 *Industrial Education Journalism	Associate Professor & Chairman Department of Industrial Technology College of Education University of North Dakota Grand Forks, N. D. 58201	Teaching, departmental administration, advising master's degree programs, research and professional writing. Research: 25%; teaching: 50%; administration: 25%
Gibbs, Gordon L. August, 1968 *Educational Administration Computer Science	Member of the Professional Staff Southwest Regional Laboratory for Educational Research & Development 11300 La Cienega Boulevard Inglewood, California 09304	Responsible for the development (design, implementation, and evaluation) of a computer-based planning system for allocation of resources in educational administration. Research: 80%; training: 20%
Munster, Richard D. August, 1968 *Educational Administration Sociology	Area Extension Director Iowa State University Extension Serv. Iowa State University Ames, Iowa 50010 or 310 Kahl Building 326 West 3rd Street Davenport, Iowa 52801	Coordination of extension activities and programs in a seven county area--formulation of new program directions--administrative responsibility of 25 area staff members. Research: 25%; administration 75%
Omvig, Clayton P. August, 1968 *Education Sociology	Assistant Professor of Education & Director, Kentucky Research Coordinating Unit College of Education University of Kentucky Lexington, Kentucky 40596	Administration of Research Coordinating Unit, research in vocational education; supporting service role to the State Bureau; teaching one class. Research: 37.5%
Cage, Bob N. November, 1968 *Educational Administration Statistics	Assistant Professor College of Education University of Florida Gainesville, Florida 32601	Director, Florida Compensatory Migrant Evaluation project. Follow-up of students, evaluation of Title III and EPDA projects. Research: 66 2/3%; teaching 33 1/3%

Name	Place of Employment	Responsibilities
Clark, Sam November, 1968 *Child Development	Associate Professor Department of Child Development Iowa State University Ames, Iowa 50010	Teaching one undergraduate and one graduate course in Child Development; advising graduate students; directing a project funded by the University Grants entitled, "Cross Perceptual Performance in Auditory and Visual Modalities of Young Children." Beginning a second study recently funded. Research: 25%; teaching: 60%; administration: 15%
Petersen, Richard R. May, 1969 *Education Physics	Associate Professor Department of Education Westmar College LeMars, Iowa 51031	Teacher education--special methods in the natural sciences and student teaching practicum. Research: 25%; teaching: 75%
Echternacht, Gary August, 1969 *Education Statistics	Associate Research Psychologist Developmental Research Division Educational Testing Service Princeton, New Jersey 08540	Air Force Study of Confidence Testing Research in ETS program area on GRE and ATGSB. Research: 100%
VanHorn, H. Roger August, 1969 *Psychology Education	Assistant Professor of Psychology Department of Psychology Central Michigan University Mt. Pleasant, Michigan 48858	Spent two years at Southwest Regional Laboratory as a psychologist--100% on research on reading and science. Moved this summer to Central Michigan University; working on developmental research. Research: 50%; teaching: 50%
Klit, John A. November, 1969 *Agricultural Education Statistics	Assistant Coordinator Program Approval & Evaluation Unit Division of Vocational & Technical Education State Department of Public Instruction 405 Centennial Building Springfield, Illinois 62706	Coordinating the development of a statewide system for evaluation of all occupational programs. Field testing of evaluation process. Research: 100%

Name	Place of Employment	Responsibilities
Thomas, Rex A. May, 1970 *Computer Science Education	Assistant Professor College of Education & Department of Computer Science Iowa State University Ames, Iowa 50010	Teaching computer science courses for behavioral scientists. Development and direction of independent research in the instructional and instructional research capabilities of the computer. Development and evaluation of computerized learning and teaching aids (CAI). (Core faculty.) Research: 66 2/3%; teaching: 33 1/3%
Bennett, Roy M. August, 1970 *Education Zoology	Consultant, Division of Curriculum Department of Public Instruction Grimes State Office Building Des Moines, Iowa 50319	Consultant, responsible for administration of projects funded under I and III of the Elementary and Secondary Education Act. Research: 33 1/3%; consulting: 33 1/3%; administration: 33 1/3%
Borcher, Sidney D. August, 1970 *Agricultural Education Agronomy	Research & Development Specialist & Assistant Professor of Agricultural Education Center for Research & Development in Vocational & Technical Education The Ohio State University 1900 Kenney Road Columbus, Ohio 43210	Principal investigator on project titled, "Use of Occupational Information in Curriculum Design and Revision." Research Specialist (Consultant) for the Center. Research: 100%
Byerly, Richard L. August, 1970 *Education Journalism	Director, Research & Development Des Moines Area Community College Ankeny, Iowa 50021	Directing institutional research for Area Community College; coordinating and conducting feasibility studies needed for long range CAMPS program development. Research: 100%
Klingensmith, John August, 1970 *Psychology Education	Assistant Professor of Education Department of Educational Psychology College of Education Arizona State University Tempe, Arizona 85281	Teaching two graduate-level courses; evaluation and data processing. Leader of a group investigating instructional techniques. Research: 25%; teaching: 75%

Name	Place of Employment	Responsibilities
McCaslin, Norval L. August, 1970 *Agricultural Education Animal Science	Assistant Professor & Dissemination Specialist Center for Research & Development in Vocational & Technical Education The Ohio State University 1900 Kenney Road Columbus, Ohio 43210	Product Evaluation System: collecting, analyzing, and reporting data; information documents, training materials, installable systems and models, utilization strategies. Research: 100%
McClain, Donald H. August, 1970 *Education Computer Science	Assistant Professor of Computer Science University of Iowa Iowa City, Iowa 52240	Teaching one class in computer science; research in educational computer usage. Research: 50%; teaching: 50%
Schumacher, Gary August, 1970 *Psychology Education	Assistant Professor Educational-Development Division Department of Psychology Ohio University Athens, Ohio 45701	Teaching courses in the areas of developmental and educational psychology, human learning, and measurement. The position also includes conducting and directing research in the developmental-educational-experimental area. Research: 25%; teaching: 50%, advising: 25%
Wisnieski, Gerald November, 1970 *Education Mathematics	Instructor Mathematics & Research & Evaluation Des Moines Area Community College Ankeny, Iowa 50021	Teaching mathematics and statistics and assisting with research and program evaluation. Working on an evaluation model for career education programs. Research: 25%; teaching: 75%
Zimmerman, Karen A. November, 1970 *Home Economics Education *Family Environment Psychology	Assistant Professor of Home Economics Education Iowa State University Ames, Iowa 50010	Teaching in Home Economics Education and advising graduate students and research. Research: 50%; teaching: 50%
Pearson, Joann M. May, 1971 *Home Economics Education Statistics Nutrition	Mrs. Ronald Pearson 6120 Ruatan Street Berwyn Heights, Maryland 20740	Her husband is a recent Ph.D. graduate in Animal Breeding and has accepted a position in the Maryland area. Joann has done some interviewing for a position there.

Name	Place of Employment	Responsibilities
Gradwell, John B. August, 1971 *Industrial Education Architecture	Assistant Professor Department of Industrial Education 201 Seltzer Hall Temple University Philadelphia, Pennsylvania 19122	Teaching and research in the Department of Industrial Education. Research: 25%; teaching: 75%
Lacroix, William J. August, 1971 *Industrial Education Journalism	Assistant Professor Department of Industrial Education School of Industry St. Cloud State College St. Cloud, Minnesota 56301	Teaching: "Modern Technology & Civilization", "Technical Drafting", and "Elementary School Industrial Arts". Research is an "overload" this year.
Lewis, Robert A. August, 1971 *Psychology Education	Assistant Professor Department of Psychology Louisiana State University New Orleans, Louisiana 70126	Teaching and research in the Department of Psychology. Research: 25%; teaching: 75%

The following trainees, listed by their prospective graduation dates, have already taken positions as indicated.

Prescott, Mary November, 1971 *Education Psychology	Assistant Professor and Counselor Counseling Center University of Idaho Moscow, Idaho 83843	Student counselor--individual counseling. Research study of 50 student married couples on spouse's attitudes. Second project with marriage counseling group. Research: 25%; consultation: 75%
Tolsma, Robert J. November, 1971 *Education Guidance & Counseling Psychology	Assistant Professor University of Missouri St. Louis Branch St. Louis, Missouri 63121	Teaching and research in the departments of Education and Psychology. Research: 25%; teaching: 75%
DeBlauw, Robert A. November, 1971 *Education Physics	Research Consultant Project EFFECT 1517 S. Theresa Avenue St. Louis, Missouri 63104	Research consultant on special research projects in the St. Louis Public Schools. Research: 100%

Name	Place of Employment	Responsibilities
McWethy, David School Year 1971-1972 *Industrial Education Computer Science	Consultant, Research Area School & Career Education Department of Public Instruction Grimes State Office Building Des Moines, Iowa 50319	Consultant in research for the Support Services. Responsible to the Chief. Coordinates, conducts, or supervises research pertaining to Career Education. Advises, stimulates, encourages, plans, and develops research projects at elementary-secondary and post-secondary levels in career education. Research: 100%
Ruebling, Charles School Year 1971-1972 *Educational Administration	Director, Educational Technology Mason City Community School District 120 East State Street Mason City, Iowa 50401	Administration of district audio-visual program, inservice education, development of program evaluation techniques, and research project-management information system (MIS). Research: 60%; teaching: 10%; administration: 30%
Tack, Leland R. School Year 1971-1972 *Education Statistics	Research Specialist Department of Public Instruction Grimes State Office Building Des Moines, Iowa 50319	Director project PRIDE (Program Research in Driver Education). Designed to measure the effectiveness of driver education. Research: 100%
VanWoerkom, David D. School Year 1971-1972 *Computer Science Education	Education Specialist State Comptroller Data Processing Division Lucas State Office Building Des Moines, Iowa 50318	Provide training for State Data Processing Personnel. Develop model of state comptroller system and simulate using GPSS programming language. Research: 60%; teaching: 35%; programming: 5%
Wilson, Richard A. School Year 1971-1972 *Industrial Education Sociology	Manager, Film Library Media Resources Center 121B Pearson Iowa State University Ames, Iowa 50010	Manager of university-wide film library and rental library of slides, tapes, and films. Central equipment and satellite units on campus. In charge of 28 employees Research: 5%; teaching: 5%; administration: 90%
Michels, Thomas E. School Year 1971-1972 *Computer Science Education	Fellow, Educational Research Training Program 207 Computer Science Iowa State University Ames, Iowa 50010	Fellow in the Research Training Program. Taking course work, internship, and thesis research.

EVALUATION OF THE EDUCATIONAL RESEARCH TRAINING PROGRAM BY FORMER STUDENTS

GRADUATES OF THE EDUCATIONAL RESEARCH TRAINING PROGRAM HAVE BEEN CONTACTED EACH YEAR. THE PRECEDING PAGES LIST THE INFORMATION OBTAINED FROM THIS SOURCE. THEIR EMPLOYMENT, TITLE, ORGANIZATION, AND DUTIES ARE DESCRIBED. PLUS THE PERCENT OF TIME DEVOTED TO RESEARCH, TEACHING, AND OTHER IS ALSO COLLECTED AND REPORTED.

THE GRADUATES ARE ALSO ASKED TO EVALUATE THE STRENGTHS AND WEAKNESSES OF THEIR TRAINING. THIS HAS BEEN USEFUL IN IMPROVING AND MODIFYING THE PROGRAM. A FEW LETTERS RECEIVED FROM FORMER GRADUATES ARE INCLUDED IN THIS REPORT AS EXAMPLES REFLECTING THEIR FEELINGS ABOUT THE STRENGTHS AND WEAKNESSES OF THE PROGRAM.

COLLEGE OF EDUCATION UNIVERSITY OF FLORIDA gainesville, Florida

FLORIDA COMPENSATORY MIGRANT
EDUCATION EVALUATION PROJECT

Bob N. Cage, Director
Glenna D. Carr
James W. Crews

October 13, 1971

Dr. Trevor Howe
College of Education
Iowa State University
Ames, Iowa

Dear Trevor:

It is again a pleasure to hear from you and to share with you some of the activities I have been involved in since leaving Iowa State three years ago. Because of the background I have from the training program while at Iowa State, I have become increasingly more capable of performing my duties as an evaluator of programs. As you recall, I participated two years ago with Dr. James Wattenbarger in the National Junior College Finance Project. This past year, I received a grant from the State Department of Education in Florida and directed the Florida Compensatory Migrant Evaluation Project. We were refunded again for this current year to conduct a follow-up study of those students who participated in the program last year. I am also becoming involved in the evaluation of various Title III and EPDA Projects throughout the southeast.

At one time, I hesitated concerning the need for a minor in statistics which I took at Iowa State, but I am now convinced that it was a worthwhile step and a very integral part of your program. I would encourage you to advise new people to get as much research design and statistics as they can put into their program.

Best wishes to you and your family, I remain

Cordially yours,

Bob

Bob N. Cage

BNC:gp

SWRL SOUTHWEST REGIONAL LABORATORY FOR EDUCATIONAL RESEARCH AND DEVELOPMENT
11300 LA CIENEGA BOULEVARD · INGLEWOOD, CALIFORNIA 90304 · TELEPHONE 776-3800 AREA CODE 213

October 8, 1971

Dr. Trevor G. Howe
College of Education
Professional Studies
201 Curtiss Hall
Ames, Iowa 50010

Dear Trevor:

I have completed and enclosed the questionnaire that you sent to me. The purpose of this letter is to respond to item number four on the questionnaire.

In retrospect, I would judge the research training program to be an excellent one for preparing educational researchers. If, however, I was to go through the program again, I do think there are some aspects that might be changed that would improve the overall strength of the program. First of all, I would like to see more time spent in the area of statistical analysis of data, and less time devoted to the methodology of research. Secondly, I would strongly urge that all of the participants in the program be required to do their internship at an off campus site. I think that it is extremely important that the program participants be exposed to a research environment in which the purpose of the research has direct application to classroom instruction.

I hope that these comments will be of use to you in evaluating and improving the research training program. Presently, I am hoping to attend the AERA meeting in Chicago next year, and perhaps we can get together at that time and talk over old times.

Sincerely,

Gordon

Gordon L. Gibbs, Ph.D.
Product Integration

GLG:mp
Enclosure

DEPARTMENT OF INDUSTRIAL TECHNOLOGY
College of Education
THE UNIVERSITY OF NORTH DAKOTA
Grand Forks, North Dakota 58201
Phone: 777-2249

October 8, 1971

Dr. Trevor G. Howe, Professor
Director Educational Research Training Program
201 Curtiss Hall
Iowa State University
Ames, Iowa 50010

Dear Dr. Howe:

It is always a pleasure to respond to your annual request for information concerning the program. I have always had a high regard for the program.

During the past year a major portion of my time was devoted to research. The project was entitled "An Analysis of Secondary Area Vocational Center of Illinois." The project was funded by the Illinois Board of Vocational Education. I believe that I sent a copy of this report to you several weeks ago.

The plans for the coming year are rather indefinite; however, proposals are in the preparation stage for an Indian studies program and also a state-wide manpower survey to determine the direction for career education in the State of North Dakota.

The final editing of a high school wood manufacturing text-book will be done the week of November 1. It is expected that the book published by the McKnight and McKnight Publishing Company will be available in the spring of 1972.

Sincerely,

Wayne

Wayne H. Zook, Chairman
Department of Industrial Technology
University of North Dakota

WZ/ig
enclosure

The Center For RESEARCH AND LEADERSHIP DEVELOPMENT IN
Vocational and Technical Education

THE OHIO STATE UNIVERSITY
1900 KENNY ROAD
COLUMBUS, OHIO 43210

October 5, 1971

Dr. Trevor G. Howe
College of Education
Iowa State University
Ames, Iowa 50010

Dear Trevor:

Enclosed is the information you requested. The strengths of my research training were in research methodology, design and statistical analysis. The greatest weaknesses were in research management, including planning and managing programmatic research programs. Although not particularly a weakness, I would like to have had more training in evaluation.

The Center is growing rapidly, we have better than doubled our staff size this past year and are waiting construction of a new building with 40,000 sq. ft. of space adjacent to the present building. Plans are for us to occupy the new building by February of 1972. We will also keep the present building. We are presently the largest federally funded research and development center in the country and looking forward to continued expansion in the years ahead.

Hope things are fine in Iowa. Say hello to everyone for me.

Sincerely,

Sid

Sid Borcher
Research and Development Specialist

SB/dz
Enclosure

The Center For RESEARCH AND LEADERSHIP DEVELOPMENT IN
Vocational and Technical Education

THE OHIO STATE UNIVERSITY
1900 KENNY ROAD
COLUMBUS, OHIO 43210

October 7, 1971

Dr. Trevor Howe
College of Education
201 Curtiss Hall
Iowa State University
Ames, Iowa 50010

Dear Dr. Howe:

It was good to hear from you and learn of your interest in graduates of the Educational Research Training Program at Iowa State. I hope you will be able to provide each of us with a brief resume of the other graduates.

Since arriving at The Center on July 1, 1971, I have been named as the principal investigator of a project to develop a system for the evaluation of Center products and utilization strategies. I have found the research methods and courses at Iowa State to be especially helpful in developing and writing the proposal for the funding of this project. Probably the greatest strength of the Educational Research Training Program at Iowa State was the practical "hands on" opportunities that were provided through the research project to which I was assigned. This was of particular value because I was able to work with the project from the beginning to the end.

In my opinion, the greatest weakness was the lack of project management information and techniques, i.e. budgeting, PERT, etc. This might be provided through simulation activities in a research seminar or course. I would also have liked to have seen more emphasis placed on evaluation.

I am enjoying my work and responsibilities a great deal. We have been fortunate to have Drs. Henry Brickell, Egon Guba, and R. M. Havelock each in to spend a day working with the Diffusion Program Area. I am assigned to this program area, and we have responsibility for reducing the time lag that occurs from the time educational innovations are

available until adoption. We have also heard Drs. William Miller, Gordon Swanson, John Crites, and Keith Goldhammer present excellent papers for The Center senior staff.

Best of luck for another successful year at Iowa State.

Sincerely,

N. L. McCaslin

N. L. McCaslin
Dissemination Specialist

NLM:hs

STATE OF IOWA • DEPARTMENT OF PUBLIC INSTRUCTION
GRIMES STATE OFFICE BUILDING • DES MOINES, IOWA 50319

PAUL F. JOHNSTON • STATE SUPERINTENDENT
David H. Bechtel, Administrative Assistant
RICHARD N. SMITH, DEPUTY SUPERINTENDENT

October 4, 1971

Dr. Trevor G. Howe
Professor of Education
College of Education
Iowa State University
201 Curtiss Hall
Ames, Iowa 50010

Dear Dr. Howe:

In reply to your letter of October 1, 1971, my responsibilities consist of being Consultant, Title III ESEA (Elementary and Secondary Education Act of 1965) in the Division of Curriculum for the Iowa State Department of Public Instruction. The duties for the position are:

- To be responsible for the general administration of Title III programs.
- To assist in the assessment of needs and facilitate the revision of the State plan.
- To assist in designing and developing new projects.
- To assist in preparing and revising guidelines for local educational agencies.
- To facilitate the dissemination of information.
- Make annual reports to the U.S. Commissioner of Education.
- To keep the State Advisory Council for Title III ESEA informed of projects and activities.
- To recommend a panel of experts to the Advisory Council.
- To conduct on-site visitations of all projects.
- To assist in the preparation of evaluation reports.
- To assist in conducting conferences for local project personnel.
- To prepare financial reports for the U.S. Commissioner of Education.

- To keep a accurate account of all local educational agency funds on a monthly basis.

- To initiate payments to local educational agencies.

- To facilitate the activities of the State Advisory Council for Title III in the State.

- To attend conferences and conduct other inservice activities in order to improve skills as an educator.

- To facilitate the Title III program in the State for local educational agencies.

This involves dissemination and research for approximately one-third of the time, consulting one-third, and the remaining one-third administration of Title III programs.

In regard to publications, additional responsibility will be involved in development and writing the State Plan and Annual Reports to the U.S. Office of Education for Title III ESEA programs.

Sincerely yours,

Roy Bennett

Roy Bennett
Consultant, Title III ESEA
Division of Curriculum

RB:rt

UNIVERSITY OF IDAHO

MOSCOW, IDAHO 83843

Student Counseling Center

October 12, 1971

Dr. Trevor Howe
Professor of Education
Director
Educational Research Training Program
Curtiss Hall
Iowa State University
Ames, Iowa 50010

Dear Dr. Howe:

I've now been in Idaho seven weeks, in my new position for about that length of time, and I am excited about my work at the University and about being in this marvelous recreational area. In response to the questionnaire, I did not elaborate extensively with regard to item II as I am presently spending the majority of my time in individual counseling. Other activities are supplementary and still developing at this time.

With regard to evaluation of the research training program, I have several comments. I feel exposure to Kerlinger's book was invaluable! The study of it alone with the opportunity to exchange reactions and ideas among our group of first year fellows was important in orienting my program so there was a balance of my interests in counseling and research. The second year seminar was meaningful to me in that hearing about other people's proposals and research projects generated ideas for other studies as well as awareness of pitfalls and problems with which to deal.

I consider the internship the highlight of being a research fellow. The high level involvement in day-to-day work in a treatment center brought my theoretical training in research to a very concrete, and usable level. It gave me experience in all aspects from generating research ideas to writing a report and interpreting its findings.

One particular skill that I wish the program had emphasized more is proposal writing. At this time I have no other comments about my training as a research fellow. Perhaps more will be generated as my experience grows. I feel my knowledge about research is and will continue to be an asset in my work.

I want to thank you for your help during my time at Iowa State and especially so, for sitting on my committee in August.

Sincerely,

Mary Prescott,
Student Counselor

MRP:kg

D. Practicum Training Arrangements

1. Description

a. Trainee's Role

Each trainee was placed in research situations beginning the second quarter of his program and continuing until the completion of the program. Following the philosophy of "apprenticeship to skilled researchers," the major criteria guiding each trainee's assignment was that he would be intimately involved in actual research.

Because comprehensive research experience is requisite to the success of the trainee as a researcher, he was assigned to several established research projects in several departments to insure that his experiences were complete. This procedure permitted the program to marshall the appropriate research resources of the University for the benefit of the trainees involved. A second major benefit was the involvement of researchers from the various disciplines on campus.

Two levels of experience were established: (1) Mechanics of research (project assignments), and (2) Stages of research (internship or practicum).

The second level of research experiences would provide opportunities for the trainee to become skilled in attacking the problems that occur at the various stages through which research progresses. These stages would include: (1) the conceptual stage, (2) the design stage, (3) the data collection stage, (4) the analysis stage, and (5) the writing of research reports.

b. Location

Trainees received experience as interns assigned to a research project in a selected situation either on or off the campus. The major criteria was that each trainee had a one to one supervisory relationship with a skilled researcher and that the internship was in his area of specialization.

2. Project Director's Evaluation

a. Practicum (or the six month internship) research experience is probably the most important single aspect of the training program. It provides the opportunity for the trainees to get their feet wet literally and apply the techniques and theory they have been taught.

b. Trainee Evaluations

Reports from individual trainees, evaluating their completed or present practicum experiences have been reproduced. To conserve space, only a few examples have been included. These appear on the pages that follow.

Name: Thomas E. Michels
Degree sought: Ph.D. in Computer Science
Department: Computer Science
Date: November 1, 1971

Internship Experiences

A project was begun in a FORTRAN programming course offered in the Computer Science Department to computerize its course records. Part of the project entails creating and updating a data base consisting of files of social security numbers and corresponding names, grades, and attendance records for each student. Then at regular intervals the data base is accessed and reports are printed of various student information.

I have been working in the project to write computer programs to create and update the data base at regular intervals with necessary grade information.

The grade information is received on marked sense computer cards which are read through the optical reader attached to the Computer Center's IBM 360/65 computer. The cards are checked for errors, sorted, and then the necessary files are updated and re-written onto a permanent data base which resides on IBM 2314 disc packs. To do this, it was necessary to write four programs to update the attendance record file and three grade files (quiz, exams, and program). These are run at regular intervals when the necessary class information is available.

I am also in the process of reviewing a paper submitted for publication in the IEEETC entitled "Formulation of Stable Difference Schemes for Systems of Initial-Value Partial Differential Equations" by G. L. Kusic and Keith Cooper.

In parallel with this, I am also carrying on my own research to fulfill my Ph.D. dissertation requirements. It is research involved with a burning problem in Chemical Engineering which requires a method for solving a series of non-linear differential equations which result from the general burning diffusion equation. Results from this research are applicable in the area of ecology. Knowing the resultant amounts of various constituants from a burning process, industry can be more knowledgable of the correct burning mixtures, hopefully to produce less pollutants in the atmosphere. This research has been under the direction of Dr. Clair Maple, Director of the Iowa State University Computation Center and was originated by Dr. Richard Seagrave, Professor of Chemical Engineering.

Name: Mary Prescott
Degree sought: Ph.D. in Education
Department: Guidance and Counseling
Date: December 10, 1970

Internship Experiences

Interning at the Iowa Training School for Boys in Eldora involved working for six months in conjunction with Howard Tupher, chief psychologist, on a number of research projects regarding the boys in the institution.

A study comparing characteristics of boys in the Health Center Residential Treatment Program with boys in the regular Cottage Program was begun and completed. It is currently at the printer's.

Analysis of data collected on a sample of drug users before the intern began her work was conducted.

Testing using the Minnesota Vocational Interest Inventory was done as the initial phase of a study of 100 new admissions as they arrived at the training school.

The idea for my dissertation was germinated during this period and during the last two-week period of the internship; fifty boys selected at random were administered the Jesness Inventory and an adaptation of Kelley's Role Construct Repertory Test as part of the data collection for this.

Perhaps most valuable to this experience was the opportunity for exchange of ideas and to be a part of the research team in all phases of its activity from planning to discussing the meaning of findings.

Name: Leland R. Tack
Degree sought: Ph.D. in Education
Department: Professional Studies
Date: December 9, 1970

Internship Experiences

The past four months I have been involved with the operation of a Digital Equipment Corporation computer called the Data Processor Model-12 (PDP-12). This type of computer in the past has been used mainly as a laboratory aid for rapid data intake and analysis. I was concened with the feasibility of adapting a computer of this size (4K) to CAI. Working with Dr. Rex Thomas, computer science, initial display and student interface programs were developed. Continued work in developing more sophistocated programs is planned for the next six months.

To coincide with this, additional work on the IBM 360/65 at Iowa State University is being planned in the area of CAI. In addition to the work in CAI, the data analysis of a research project conducted by Dr. Anton Netusil, education, is being undertaken. Formating, coding, analysis through multiple regression analysis of variance techniques, and interpretation will be involved.